

Developments in Geotechnical Engineering

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Correlations of Soil and Rock Properties in Geotechnical Engineering

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Preface

Geotechnical engineering has grown rapidly in the past half century with the contribution from academics, researchers and practising professionals. It is still considered a combination of art and science with research and observations in the field refining and improving geotechnical design. Although in situ and laboratory geotechnical testing still remain the two preferred methods of determining design parameters, empiricism has a unique and a big role to play in geotechnical engineering.

Geotechnical literature is full of empirical equations and graphs, and they are used regularly by practitioners worldwide. These are derived based on laboratory or field data, past experience and good judgement. Where little or no geotechnical information is available, or where reasonableness of a test result needs to be checked, these empirical equations provide an alternative very useful to the engineer. For some parameters, you may be confronted with several empirical equations, and it is a good practice to clearly state the source so that the readers can make their own judgement.

The main objective of this book is to provide correlations commonly used by geotechnical practitioners to assess design parameters important in the geotechnical design activities. It is intended mainly for the practitioners although its value extends to academics and researchers as well. We have arranged the chapters on the basis of the main types of in situ tests with laboratory tests on soil and rock given two separate chapters. In Chapter 2, we have provided a brief overview of the geotechnical properties commonly determined in the laboratory, their relevance in soil mechanics and laboratory tests for determining them. It gives the necessary background for the chapters that follow.

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